

TECHNOLOGY @ ROCKY FLATS

Pipe Overpack Container

The driver for development and implementation of the Pipe Overpack Container (POC) package was to resolve a combination of TRU Waste disposal requirements, including the WIPP-WAC, TRUPACT II SARP, and WIPP RCRA Permit, to allow the disposal of residue materials. Historically, the DOE did not recognize that an end to plutonium operations would result in greater quantities of more concentrated plutonium-containing materials being disposed of as waste; shipping and disposal requirements reflected the assumptions of ongoing operations. The assumptions of TRU waste containing modest plutonium concentrations permeated all risk calculations, and resulted in numerous impediments to Site closure such as small quantities of plutonium allowed per drum. Accepting these restrictions would have increased disposal costs several-fold due to unnecessary processing and buying and handling several times the number of containers. Schedules would have been increased adding years to Site closure. TRUPACT II resources and a significant portion of WIPP's total capacity would have been wasted, at a tremendous cost to DOE and the country.

A number of DOE organizations spearheaded by Rocky Flats created a standard package for low-mass/high-activity residues that fit inside a drum to take advantage of the WIPP handling infrastructure, but provided substantially more protection for the material during a transportation accident. This POC package included both six-inch and twelve-inch diameter pipes manufactured to provide protection for small packages in the event of fire or pressurization. The necessary safety and risk analyses were performed and the SARP changed to accept the revised package, all of which occurred over a period of years. The POC packaging supported the residue processing, and depended on the development and acceptance of residue characterization techniques since normal TRU waste characterization techniques were not accurate at residue plutonium concentrations.